

The Flyweight Pattern



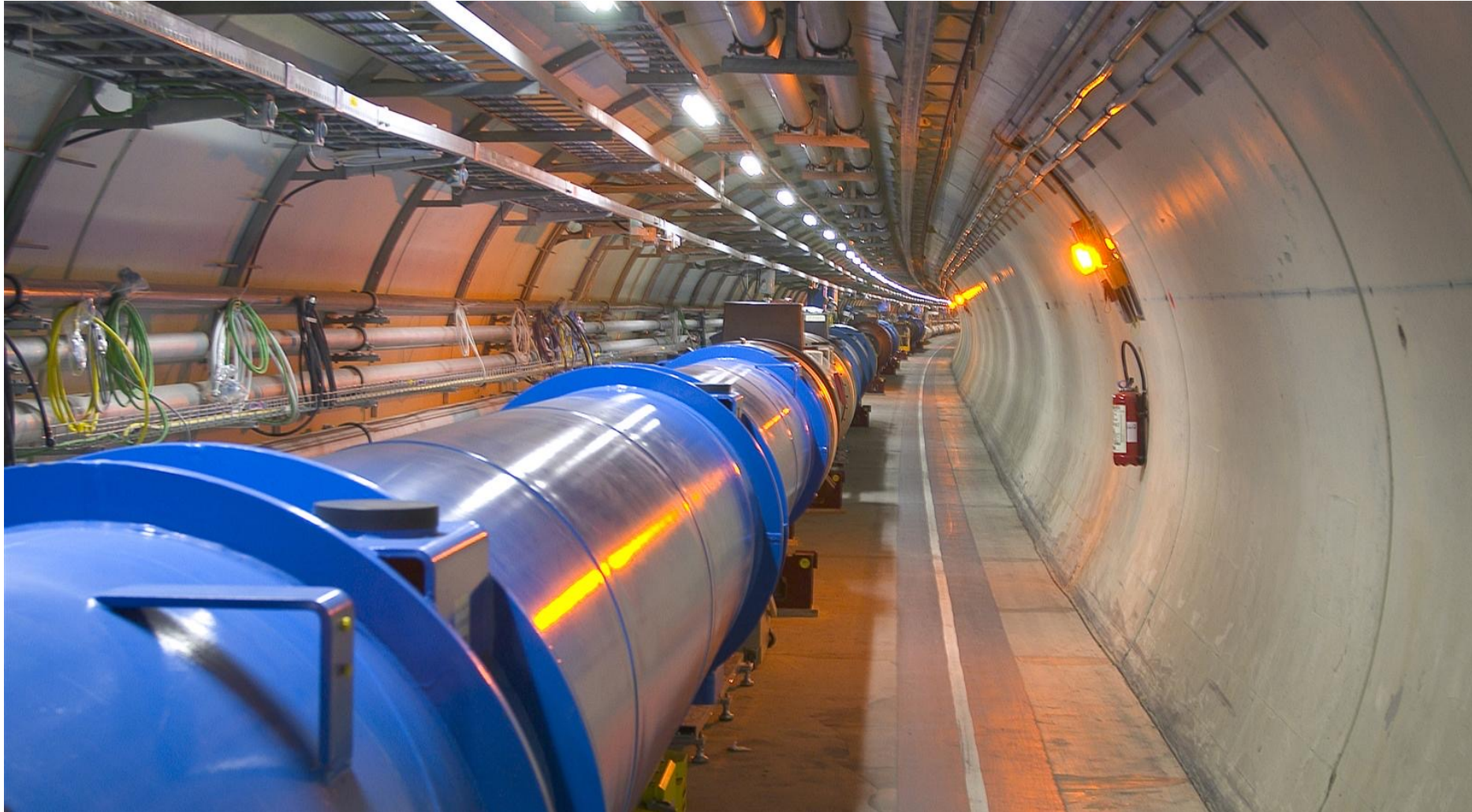
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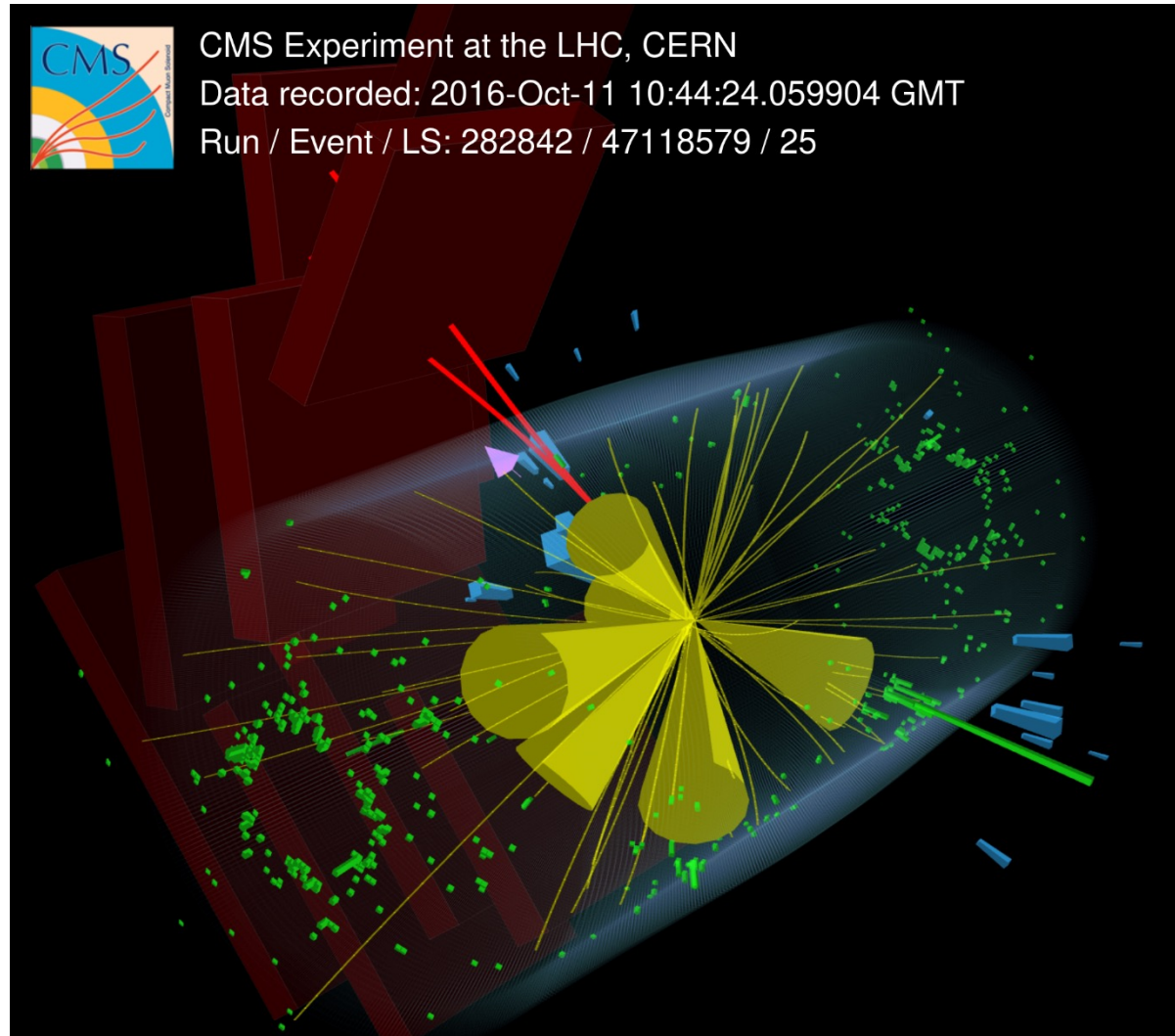
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Large Hadron Collider at CERN



Large Hadron Collider at CERN



Demo



Naïve implementation

Define an Event class

Instantiate one class per collision

Keep all Event objects in a list



**Imagine billions of events
per second at the LHC!**



Flyweight: Structural

Centralize state for many objects

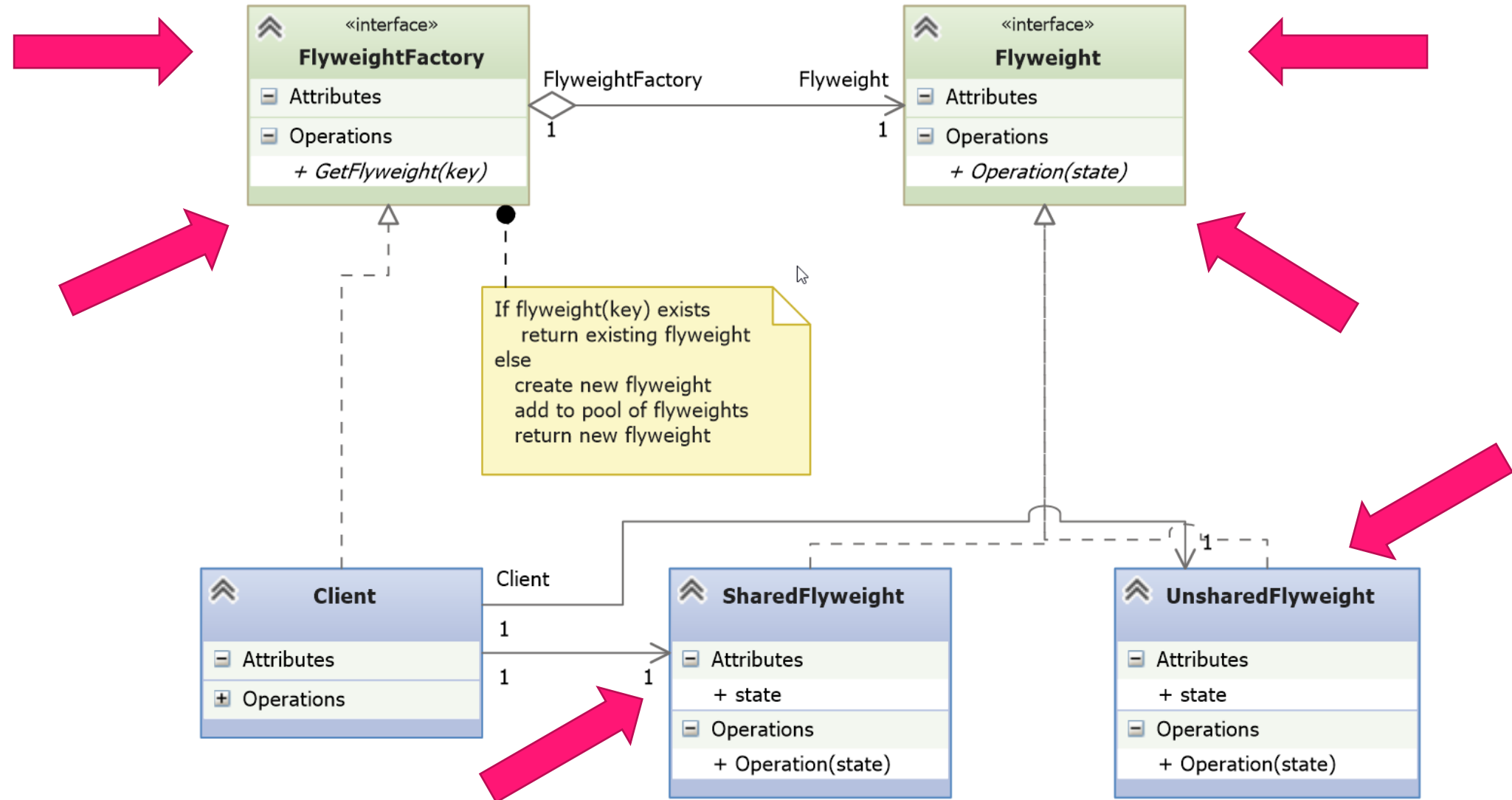
Reduce required object instances

Single instances are no longer independent

All instances controlled the same



Flyweight Structure



Demo



Refactoring with Flyweight

Use numpy module

- pip install numpy



Summary



Flyweight applicability

Uses efficient, shared storage

- numpy arrays

Often used with other patterns:

- Composite
- State
- Strategy

Keep it in your toolkit!

